

INDEX.

Aboriginal stone drilling, 536.
Acacia farnesiana, 981.
 greggii, 891.
 hirta, 987.
 Adjustment, new fine, 346.
Egeria acerni, 751.
 African explorations, 78, 165, 166, 417, 599, 672, 924.
Agalma, 186.
 Apiculture, 195.
Apis dorsata, 1010.
 florea, 1010.
 Aid to science, 302.
 Alaska, census of, 251.
 people of, 403.
 Aldrich, C., birds out of place, 476.
 blackbirds catching fish, 810.
 blue gull, 812.
 blue jay, 319, 904.
 braving the blizzards, 903.
 dog's discrimination of sound, 563.
 habits of red clover, 651.
 house wren, 318.
 indigo bird, 394.
 Iowa birds, 653.
 intelligence in a cat, 141.
 variations in the growth of Virginia creeper and hickory, 227.
 red winged starling, 393.
 snakes climbing trees, 904.
 survival of wild habits in domesticated cattle, 563.
 woodchuck climbs a tree, 737.
 Algae, 732.
 North American, 652.
 Alphabet, Land's, 404.
 Alpheus, larva of, 784.
 Amazon stones, 68.
 Amblystoma, 727.
Amorpha californica, 985.
 fruticosa, 986.
Ampelopsis quinquefolia, 985.
Ancistrodon piscivorus, 561.
 Angular aperture, 758.
 Animal life, affected by environment, 550.
 Animal mechanism, 796.
 Animals, reasoning faculties of, 604.
Anolis principalis, 96.
 Ant, 573.
 new leaf-cutting, 102.
 white, parasites of, 478.
 Antelope, prong-horn, 658.
 Anthropology, American, progress of in 1880, 616.
 Tylor's, 990.
 Anthropometry, 490.
Antirrhinum mauraudioides, 986.
Apatura alicia, 487.
Apocynum cannabinum, 985.
 Aquaria, marine animals in, 656.
 Aquilegia, fertilization of, 134.
Argonauta argo, 908.
Argynnis myrina, 1009.
 Arkansas, flora of, 388.
 Army worm, 192, 750.
 Aroostook, the, botany of, 469.
 Asia, 1024.
Asilus and *Libellula*, 1005.
Aster pauciflorus, 986.
Astragalus utahensis, 651.
 Axolotl, 810.
 Aye-aye, 261.
 Aztec dictionary, 249.
 Bacteria, 527, 897.
 Baird, S. F., on epidemic among fishes, 234.
Balanoglossus, 811.
 Barber, E. A., ancient Pueblo workshop, 754.
 Pueblo pottery, 453.
 Barnes, H., reason, a psychological distinction, 789.
 Bass, black, 891.
 Bassett, H. J., *Cynips rileyi*, 149.

Bathybius, 813.
Bathyopsis fissidens, 75.
Batrachia, skull of, 892.
 Beal, F. E. L., does the crow blackbird eat crayfish? 904.
 migration of sandhill crane, 142.
 shower of *Cyclops quadricornis*, 736.
 Beal, W. J., the method of distinguishing species of *Populus* and *Juglans* by the young naked branches, 32.
 Bee, endocranium of, 353.
 flies, larval habits of, 143, 438.
 Bee's tongue, 113.
 Beetles, burying, 128.
 change in nervous system of, during metamorphosis, 58.
Belodon buceros, 922.
 scolopax, 923.
 Bessey, C. E., evaporation of water from leaves, 385.
 progress of botany in U. S. in 1880, 947.
 Bezoar stones, 479.
 Biology, comparative, 663.
 Bird, fossil, 253.
 life of New England, 801.
 Birds, 653.
 diseases and injuries in, 283.
 flight of, 796.
 hybrid, 808.
 migrating on back of larger birds, 905.
 migration of, 870, 1004.
 migration of, at night, 902.
 Bison in Mexico, 658.
 Blackbird, crow, 810, 904.
 red-winged, 476.
 Black Hills of Dakota, 887.
 Black mustard, dimorphism in, 997.
Blapharoceridae, 748.
 Blind crayfish, 881.
 Flood in hibernation, 677.
 Blue bird, 478.
 food of, 66.
 Boar, wild, 956.
 Boll, Jacob, obituary of, 84.
 Bombyliidae, larvae of, 143.
 Botany, method of teaching, 842.
 of California, 44.
 of Colorado desert, 24.
 progress of in U. S. in 1880, 947.
 Brain as an organ of mind, 48.
 human, origin and descent of, 513.
 of locust, 285, 372.
 of lower vertebrates, 395.
Braula coeca, 568.
 Brinton, D. G., notes on the Codex Troano and Maya chronology, 719.
 Bronze age in Germany, 334.
 Brown, A. D., land shells of Dominica, 56.
Bubo virginianus, var. *pacificus*, 209.
 Buffalo, 119.
 Bugs, number of species of, 60.
 Bumpus, H. C., breeding habits of fish-hawk, 809.
 habits of yellow-bellied woodpecker, 738.
 Burrill, T. J., bacteria the cause of disease in plants, 527.
Buteo fuliginosus, 478.
 montanus, 209.
 swainsoni, 478.
 Butterflies, Hudson bay, 572.
 length of life of, 868, 911.
 migrations of, 577.
 odors in, 822.
 structure and life history of, 885.
 trees attractive to, 572.
 Calamintha nepeta, fertilization of, 11.
 California, botany of, 44.

- Callimorpha fulvicosta*, 751.
Callosamia angulifera, 752.
Caloptenus spreus, retarded development of, 748, 1007.
 Call, R. E., fossils of Iowa loess, 585.
 loess in Iowa, 782.
 new Texan Union, 390.
 Succinea campestris aurea, 391.
Cambarus primævus, 832.
 Campbell, D. H., development of stomata of *Tradescantia* and Indian corn, 761.
Campylorhynchus brunneicapillus, 211.
 Canker worm, 751.
 Carcinology, American, record of, for 1880, 532.
 Cardinal bird, 215.
Cardinalis virginianus, 215.
Carphopops helena, 738.
Carpodacus frontalis, 213.
Carya alba, 227.
Catathlaeus rhabdodon, 829.
Castilleja linariaefolia, 986.
 Cat, intelligence in, 140, 475, 1004.
 Caton, J. D., effects of reversion to the wild state in our domestic animals, 955.
 Cattle, domesticated, survival of wild habits in, 563.
 Cave animals, 877.
 beetles, 916.
 in Arizona, 679.
 insects, 231.
 spider, 814.
Cecidotæa nickajackensis, 879.
Cecropia moth, 241.
 Cedar apples, 471.
 Cellular irritability, 59.
Cephalanthus occidentalis, 985.
Ceratophyllum demersum, 986.
 in fruit, 1007.
Cerebellum, 682.
Cereus giganteus, 983.
 ervua marai, 479.
Celæna renigera, 752.
Centrophilus ensifer, 882.
Champsosaurus australis, 670.
 Chapparel cock, 218.
 Characeæ, Allen's, 55, 133, 560.
Charadrius sheppardianus, 253.
 Charbon, 421.
 Chat, long-tailed, 215.
 Chick embryos, mounting whole, 841.
 Chicken, monstrosity in, 261.
 Chimpanzee, 448.
 Chinch bug, 820.
 Chologaster, 232.
Chordeiles henryi, 217.
Chrysomitris psaltria, 213.
 Chukchi people, 857.
Cicada septendecem, 479.
 Cilia, 741.
Cinura, 701.
Ciona occellata, 394.
 Clam, 362.
 Claw of index digit of Vultures, 906.
 Clays, metalliferous, 418.
 Cleistogamy, 474.
Clematis drummondii, 986.
 Clevenger, S. V., on comparative neurology, 16, 103.
 origin and descent of human brain, 513.
Clidastes conodon, 588.
 Clover weevil, 750.
 Coal, structure of, 497.
Codex Troano, 719.
 Coelenterates, radial symmetry of, 142.
 Cœlom theory, 352, 1002.
Collyrio excubitoroides, 210.
 Colorado desert, botany of, 24.
 Color, change of in crabs and prawns, 812.
 Common names of our plants, 1000.
 Composite, 227.
 Conch fisheries, 85.
 Conifers of Japan, 895.
Conoryctes comma, 829.
Convolvulus occidentalis, 986.
 Cook, A. J., relations of agriculture to science, 195.
 Cope, E. D., and A. S. Packard, Jr., fauna of - Nickajack cave, 877.
 Cope, E. D., a new genus of Catostomidae, 59.
 Belodon in New Mexico, 922.
 classification of *Perissodactyla*, 340.
 effect of impacts and strains on the feet of Mammalia, 542.
 Eocene *Plagiaulacidae*, 921.
 geology of the Lake Valley mining district, 831.
 Laramie Saurian in the Eocene, 669.
 Lowest Eocene mammals, 829.
 Miocene dogs, 497.
 new *Clidastes* from New Jersey, 587.
 new genus of *Perissodactyla* dip-larthra, 1018.
 new type of *Perissodactyla*, 1017.
 notes on *Creodonta*, 1018.
 on Eocene *Vertebrata* of Wind River basin, 74.
 on Japanese lap dog, 233.
 origin of foot structure of the ungulates, 269.
 Permian formation of New Mexico, 1020.
 Rodentia of American Miocene, 587.
 temporary dentition of a new *Creodont*, 667.
 Copepod Crustacean, variations in, 689.
 Corbula of Plumularidae, 901.
Coreopsis rosea, 1000.
 Corn, injured by *Sphenophorus*, 915.
Coryphodon, 543.
 Cotton worm moth, 244.
 Coulter, J. M., unusual actions of a hen turkey, 812.
 Crab, fiddler, early stages of, 784.
 Crabs, change of color in, 812.
Crabrus vulgigagellus, 914, 1008.
 Cane, sandhill, migrations of, 141.
Crangonyx antennatum, 880.
 Crayfish, blind, 881.
 Tertiary, 832.
Creodonta, 1018.
Creosote bush, 25.
 Crow, 477.
 Crustacea, anatomy of, 564.
 deep sea, of Gulf of Mexico, 742.
 male, producing eggs, 813.
 of Caribbean sea, 509.
 stomopod, heart of, 320.
 works on American in 1880, 532.
 Crustacean, fossil *Phyllopod*, 456.
 Cryptogams, 53.
Cuscuta californica, 986.
 Cuttle fish, 742.
Cyanocitta californica, 210.
Cyanospiza cyanea, 653.
Cyclops quadricornis, 736.
 Cynipidae, dimorphism in, 566.
Cynips q. rileyi, 149.
Cypripedium spectabilis, 894.
 Dall, W. H., Intelligence in a snail, 976.
 progress in the study of recent American Mollusca in 1880, 704.
 so-called Chukchi and Namollo people of Eastern Siberia, 857.
 sudden interest in Japanese ornithology, 1005.
Dasylyrion texanum, 873.
Danais archippus, 329, 868, 869.
 Deep sea animals, 221.
 fauna of Bay of Biscay, 230.
Deltatherium absarokæ, 669.
 Demerara, 937.
Dendroica æstiva, 215.

- Dentition, temporary, of a new Creodont, 667.
Diaptomus sanguineus, 689, 742.
Dilar, 822.
Dimetrodon biradiatus, 164.
 Dimorphism of gall-flies, 566.
 Diptera, preparation of, 1008.
 Dog burying a lamb, 172.
 Dog's discrimination of sounds, 563.
 Dog, Japanese lap dog, 233.
 Dominica, land shells of, 56.
 Dove, carolina, 216.
 ground, 216.
 white-winged, 216.
 Doyle, W. E., history of buffalo, 119.
 Dragon fly, 141.
 Dredgings in Lake Tiberias, 236.
 Drugs, adulteration of, 82.
Dynastes hercules, 60.
Eclipidrilus frigidus, 909.
 Edwards, W. H. length of life of butterflies, 868, 911.
 Egypt, flint implements in, 759.
 stone age in, 488.
Eleocharis palustris, 986.
 Elephant, African, anatomy of, 659.
 Elm leaf-beetle, 242.
Empusa, 52.
 Endlich, F. M., Demerara, 937.
 Entomological Commission, U. S. 84.
 2d Report, 554.
Entomophthora muscae, 52.
Eozoön, 813.
Epeira cavatica, 814.
Eremophila alpestris, 284.
 Erie, lake, preglacial outlet into Lake Ontario, 408.
 Ernst, A., lac insect, 235.
Estheria dawsoni, 496.
Eubranchipus vernalis, 136, 280.
Eucalyptus, 558.
Euplectrus comstockii, 61.
Eutestia radix, 758.
 Evolution of tertiary species of *Planorbis* at Steinheim, 793.
 Evolution theory, 420.
 Felsites, 589.
 Fernald, C. H., oviposition in Tortricidae, 63.
 Ferns, 462.
 Fertilization by means of pollen tubes, 168.
 Fewkes, J. W., budding in free medusae, 59.
 Siphonophores, 186, 772.
Filaria in human blood, 909.
 Finch, Arkansas, 213.
 Finch, house, 213.
 Fisheries of Pennsylvania, 726.
 Fishes, epidemic among, 234.
 eye-like organs in skin of, 657.
 food of, 147, 565.
 Paleozoic, 252.
 study of, 222.
 Fish-hawk, breeding habits of, 809.
 Flowers, relations of elevation to change of color in, 52.
 Fly, black, 330.
 Flycatcher, Arkansas, 215.
 ash-throated, 217.
 black-crested, 214.
 great-crested, 601.
 Forbes, S. A., English sparrow in Illinois, 392.
 on food of blue bird, 66.
 Forests in U. S., 54.
 Forest, tropical, 451.
 Fossil Vertebrata of Wind River basin, 74.
Fouquieria splendens, 980.
 Fruits, seedless, 653.
Fuligula rufina, 565.
 Fungi, 315.
 insect-destroying, 52.
 Furbish, Kate, botany of Aroostook, Maine, 463.
Galeruca xanthomelana, 242.
 Gall, blue, 812.
 Gall flies, dimorphism in, 566.
 insects, 402.
 Garman, W. H., *Hydrophilus triangularis*, 660.
 Gatschet, A. S., wild rice in Europe, 580.
 Geikie, A., on ancient glaciers of the Rocky mountains, 1.
Gelasimus pugnax, larva of, 784.
Geococcyx californianus, 218.
 Geological Congress, International, 588.
 Geological Survey, U. S., 39.
 Gesture signs, 155.
 Gilbert, C. H. and D. S. Jordan, on Pacific salmon, 177.
 Gillman, H., *Lemna polyrhiza*, 896.
 on English sparrow, 129.
 Gissler, C. F., effect of chemico-physical influences on the evolution of Branchiopod Crustacean, 280.
 on hermaphrodite of *Eubranchipus vernalis*, 136.
 variations in a Copepod Crustacean, 689.
 Glacial deposits in Valley Drift in Maine, 251.
 phenomena in the Yellowstone Park, 203.
 Glaciers, ancient, of Rocky mountains, 1.
 of Andes, 926.
 Gnat-catcher, black-headed, 214.
 Goat, wild, 957.
 Gonidia of lichens, 315.
Gonopod, 881.
Gorilla, 447.
 Greene, E. L., botanizing on Colorado desert, 24.
 Green lizard, 96.
 Ground-beetle, herbivorous, 1011.
 Gulf Stream, 171, 933.
 weed, 317.
 Gymnosporangia, 471.
 Haldeman, S. S., on a rock retreat, 248.
Harporhynchus crissalis, 217.
 curvirostris, 217.
 redvivus, 210.
 Harvey, F. L., flora of Arkansas, 388.
 Harvard, V., Sotol, 873.
 Hawk new to U. S., 477.
 brown, 209.
 sparrow, 209.
 western red-shouldered, 209.
 western red-tailed, 209.
 Hay, O. P., *Carphophiops helene* in Indiana, 738.
 Eutestia radix in Indiana, 738.
Helix aspersa in California, 744.
 Hen, wild, 959.
Heterovorus ground-beetle, 1011.
 Hermaphroditism in *Eubranchipus vernalis*, 136.
 Herring, 237.
 Hessian fly, 750, 916.
 Hickory, 227.
 Higley, W. K., peach-tree yellows, 849, 951.
 Hog fish, 320.
 Hog, wild, 958.
 Holmes, W. H., glacial phenomena in the Yellowstone Park, 203.
Holacantha emoryi, 985.
 Holterhoff, E., Jr., on breeding habits of western birds, 208.
 Horse, wild, 957.
 Human cranium, prehistoric cup of, 918.
 embryo, tail in, 395, 740.
 species, 643.
 Humphreys, J. T., on minerals of North Carolina, 78.
 the king snake swallows a water moccasin, 561.
 Hybrid birds, 808.
 Hybridism between chimpanzee and gorilla, 448.
Hydrophilus, 814.
 triangularis, 660.
Hyphantria textor, 747, 751.
Icteria longicauda, 215.
 India, 835.
 Indians, 250, 822, 826.
 Demerara, 937.

- Indian corn, 736.
 movement of roots in germinating, 807.
 stomata of, 761.
 superabundance of pollen in, 1000.
- Indian implements, 425.
- Indigo bird, 394, 653.
- Infusoria, 463.
 possible nervous system in, 741.
- Insectarium, 681.
- Insect boxes, 401.
 destroying fungi, 52.
 enemies of rice plant, 148.
 lac, 235.
 scale on raspberry, 487.
- Insects, nerves of, 238.
 retarded development in, 1007.
 stigmata of, 320.
- Intelligence in a snail, 976.
- Iowa, birds of, 653.
 loess of, 782.
- Island life, 305.
- James, J. F., botanical notes from Tucson, 978.
 reasoning faculties of animals, 604.
- Japanese lap dog, 233.
 bronze bells, 1015.
- Japan, sepulchral mounds and customs of, 406.
 shell heaps in, 43.
- Jay, blue, 319, 654, 904.
 Californian, 210.
- Jelly fish, 658.
- Jones, M. E., germination of *Astragalus utahensis*, 651.
 poison of *Zygadenus paniculatus*, 651.
- Jordan, D. S., and C. H. Gilbert, on Pacific salmon, 177.
- Juglans, 32.
- Juglans rupestris, 987.
- Kerr, W. C., on frost drift, 75.
- Kingsley, J. S., discoveries in the anatomy of Crustacea, 564.
 effects of different colored light on growth of animals, 564.
 record of American Carcinology for 1880, 532.
- King snake, 561.
- Knowledge, 965.
- Koppenfels, H. von, on gorilla, 447.
- Lac insect, 235.
- Land and sea, relative elevation of, 162.
- Landa's alphabet, 404.
- Lark, western, 213.
- Larrea mexicana, 25, 981.
- Laura gerardiae, 741.
- Leaves, evaporation of water from, 385.
- Lemna polyrrhiza, 896.
- Lepidoptera, ventral vessel of, 352.
 works on, 484.
- Lichens, gonidia of, 215.
- Light, effect of, on eggs of cuttle fish, 174.
 on growth of animals, 564.
- Limenitis bredowii, 151.
- Limnæodinium, 264, 759.
- Linyphia weyeri, 232.
- Lithology, 617.
- Lizards, scales of, 238.
- Lizzia octopunctata, 60.
- Lobster, deformities of, 478.
- Lockwood, S., eastern snow bird, 518.
 elm leaf beetle, 242.
 mussel and insect climbers, 737.
 paper Nautilus again in New Jersey, 908.
- Locust, 822.
 brain of, 285, 372.
 Rocky mountain, 748, 749, 1007.
- Locusts in Mexico, 578.
 in the West, 1013.
- Loess, Iowa, fossils of, 585.
 of Iowa, 782.
- London purple, 827.
- Loxolophodon, 888.
- Lycosa, 396.
- Macloskie, G., the endocranium and maxillary suspensorium of the bee, 353.
- Malar bone, temporal process of, in ancient human crania, 917.
- Male Crustacea producing eggs, 813.
 Phalangidae producing eggs, 813.
- Mammalia, Eocene, 829.
 feet of, 542.
- Mammoth in Siberia, 176.
- Man, 643.
 antiquity of, 249.
 early, in Britain, 151.
 early, in New Jersey, 333.
 fossil, 154.
- Manuscript Troano, 625.
- Marine invertebrate fauna of New England, 171.
- Marsh, J. W., on the relation of elevation to change of color in flowers, 52.
- Marr, G., new tube-constructing spiders, 396.
- Mason, O. T., progress of American anthropology in 1880, 616.
- Maya calendar, 767.
 chronology, 719.
- May fly, 395.
- Medicago sativa, 985.
- Medusa, budding in free, 59.
- Meehan, T., hardness of Eucalyptus, 558.
- Melantho, 1005.
- Mergus serrator, 285.
- Mescal, 875.
- Mesenchym, 352.
- Mesquite, 29.
- Meteoric dust, 840.
- Mica veins, 333.
- Micrographic tracings, 757.
- Microscope, acme, 83.
- Microtome, 841.
- Migrations of birds, 870, 902, 905, 1004.
- Mildew on cotton goods, 132.
- Milne, J. J., on shell heaps in Japan, 43.
- Minot, H. D., migration of birds, 870.
- Miocene, American, rodentia of, 586.
 dogs, 497.
- Miocænus turgidus, 830.
- Missouri, anthropology in, 245.
- Mistletoe of Colorado desert, 29.
- Mites, 577.
- Mocassin, water, 561.
- Mollusca, progress in the study of in 1880, 704.
- Mollusks, organ of smell in, 600.
- Molothrus pecoris, 283.
- Monera, 808.
- Moneron, new, 142.
- Monks, Sarah P., on dragon fly, 747.
 on green lizard, 96.
- Morris, G. K., on new leaf-cutting ant, 100.
- Molds, poisonous, 389.
- Mound builders, 684.
- Mounting on square slips, 1029.
- Mt. Ktaadn, 728.
- Musk sheep, 743.
- Mya arenaria, 362.
- Mya and Lunatia, changes in, 1015.
- Myiarchus crinitus, 601.
- Myriopoda, carboniferous, 87.
- Myxomycetes, 135.
- Namollo people, 857.
- Nautilus, paper, in New Jersey, 908.
- Nebular hypothesis, 799.
- Nephelodes violans, 575.
- Nervous system, central, 50.
- Neurology, comparative, 16, 103.
- Newberry, J. S., iron ores of Utah, 410.
- New Jersey, early man in, 333.
- New Mexico, Permian formation of, 1020.
- New York, Indian relics in, 489.
- Nicaragua, archaeology of, 579.
- Night hawk, western, 217.
- Nolina texana, 985.

- Nomenclature, 219, 883.
 Norse mythology, 580.
 North Carolina, iron implements in an ancient mine in, 7.
 minerals of, 75, 380.
Nyassa multiflora in Maine, 134.
- Objectives verification of, 1029.
 Ohio, archaeology of, 72.
Ommastrephes illecebrosa, 367.
Ophibolus sayi, 561.
 Ophiurans, 319.
Opuntia arborescens, 984.
 Orang outang, 655.
 Orchids, 316.
Orconectes hamulatus, 881.
 Osborn, Herbert, food habits of *Saperda cretata*, 244.
 Osborn, H. L., Newfoundland squid, 366.
Otiorynchus, vitality of, 331.
 Owl, barn, 209.
 burrowing, 283.
 great-horned, 209.
 long-eared, 209.
 Oyster, breeding habits of, 57.
- Packard, A. S., Jr., and E. D. Cope, fauna of Nickajack cave, 877.
 Packard, A. S. Jr., brain of locust, 285, 372.
 early larval stages of fiddler crab and *Alpheus*, 784.
 fossil phyllopod Crustacean, 496.
 fossil Tertiary crayfish, 832.
 locusts in Mexico, 578.
 fauna of Luray and New Market caves, Virginia, 231.
 probable cause of the longevity of turtle, 738.
 Scolopendrella and its position in nature, 698.
- Palaeontology in United States in 1880, 273.
 Palmer, E., sacrificial stone of the City of Mexico, 752.
Paltostoma torrentium, 567.
Papilio philenor, 327.
 Parasite, sheep, 1011.
 Parasites in viscera of birds, etc., 143.
 Paris green, 821.
Parkinsonia torreyana, 982.
Paroides flaviceps, 217.
 Peach yellows, 849.
Penicillium, 133.
 Pennsylvania, geology of, 161.
 Pepperidge tree in Maine, 134.
Perissodactyla, a new type of, 1017.
 diplarthra, new genus of, 1018.
 Perkins, G. H., on archaeology of Vermont, 425.
 Permian formation of New Mexico, 1020.
 vertebrates, catalogue of, 162.
- Phaeocephala nitens*, 215.
Phalangidae, males, producing eggs, 813.
Philabertia cynanchoides, 986.
Phoradendron californicum, 29.
 Phyllopod Crustacean, fossil, 496.
Phylloxera, 238, 483, 821, 1011, 1012.
Phytonomus punctatus, 750, 912.
Pieris monuste, 577.
Pinus banksiana, 316.
Pipilo aberti, 211.
 fuscus, 212.
 mesoleucus, 212.
 Pitcher plant, 560.
Planorbis, 814.
 evolution of Tertiary species, 793.
- Plants, bacteria the cause of disease in, 527.
 Caruel's system of, 803.
 common names of, 1000.
 fossil, 221.
 number of existing species, 173.
 power of movements in, 729.
 sex in, 89.
 Plant lice, 819.
- Plethodon æneus*, 878.
 Poison, microscopic test for, 1029.
Poliopitila melanura, 214.
 plumbea, 214.
Polistotrema dombeyi, 320.
 Pollen, superabundance of in Indian corn, 1000.
Populus, 52.
Populus fremonti, 986.
Porcellana, 728.
Potamogeton natans, 986.
 pectinatus, 986.
 Potato disease, 136.
 Pottery, Pueblo, 453.
 Preparation of Diptera, 1008.
Prozélurus, 339.
Procamelus, 547.
Prodenia autumnalis, 752.
Prosopis juliflora, 29.
 pubescens, 30.
Protohippus, 544.
Psaltriparus minimus, 213.
Psocina, structure of claw in, 1013.
Ptilodus mediævus, 922.
 Pueblo Indians, 824.
 pottery, 453.
 workshop, ancient, 754.
- Pumpkin, histology of, 134.
Pycnogonidae, 142.
Pyrethrum, 245, 569, 744, 817.
- Quinnat, 177.
Quiscalus æneus, 810.
- Rau, C., aboriginal stone drilling, 536.
 Reason, 789, 791.
 Red clover, 651.
 Renilla, 349.
 Retarded development in insects, 1007.
 Reversion to wild state, effects of in domestic animals, 955.
 Reynolds, A. M., breeding habits of blue bird, 478.
Rhexia virginica, 988.
Rhinoceros merki, 589.
Rhizopoda, 237, 596.
 Rhubarb, 82.
 Rice plant, insect enemies of, 148, 751.
 wild, in Europe, 580.
- Riley, C. V., *Crambus vulgivagellus*, 914.
 larval habits of bee flies, 438.
 Phylloxera, 238.
 on Cicada septendecem, 479.
 on larvae of bee flies, 143.
 on Pyrethrum, 145.
 supposed army worm in New York, 574.
 yellow fever fly, 150.
- Robin, 477, 653.
 Rocky mountains, ancient glaciers of, 1.
 Rodentia of American Miocene, 586.
 Roots, movements of, in germinating Indian corn, 807.
 Rubber producing tree, 54.
 Rusby, H. H., curiosities of tree growth, 559.
- Sacrificial stone of Mexico, 752.
 Salamander, 727.
 Salmon, 177.
 land-locked little red, 814.
- Salvia splendens*, fertilization of by birds, 265.
Samia columbica, 752.
Samolus valerandi, 985.
Saperda cretata, 244.
 Sargasso weed, 317.
 Saurian, Laramie, in the Eocene, 669.
 Saxony, *Stegocephali* in, 1022.
Sayornis nigricans, 213.
 Schimper, A. F. W., on growth of starch grains, 558.
 Schwarz, E. A. on *Euplectrus*, 61.
 Science, government aid to, 302.
 Science-teaching in schools, 85.
Scirpus olneyi, 985.
 pungens, 985.

- Sceloporendrella, its position in nature, 698.
 Scotland, new Carboniferous fossils in, 1021.
 Sea mosses, 893.
 spiders, 658.
 Seedling, sensitiveness of the root tip of the, 228.
 Seeds, influence of the respiration of, 228.
 vitality of, 54.
 Sericoris instrutana, 1009.
 Sexes, resemblances and differences of, 899.
 Sharks, deep sea, 689.
 embryology of, 394.
 Shedd, W. G., on the Leadville mines, 338.
 Sheep parasite, 1011.
 wild, 957.
 Shell heaps in Japan, 43.
 Shells, land, of Dominica, 56.
 worked, in New England, 1016.
 Shrike, white-rumped, 210.
 Shufeldt, R. W., claw of index digit of the Cathartidae, 906.
 diseases and injuries in birds, 283.
 Silk culture, in California, 749.
 Simonds, F. W., on iron implements in an ancient mine in North Carolina, 7.
 Simulium, 330, 916.
 Siphonophores, 186, 772.
 nervous system in, 813.
 Skin furrows of the hand, 156.
 Slime molds, 135.
 Slipper, lady's, 894.
 Smell, organ of, in land pulmonates, 88.
 Snail, intelligence in a, 976.
 Snails, land, organs of smell in, 635.
 Snake climbing a tree, 904.
 Snow bird, eastern, 518.
 Soko, 448.
 Sotol, 873.
 Soundings in Gulf Stream, 172.
 South America, geographical discovery in, 500.
 Sparrow, English, 139.
 English in Illinois, 302.
 Spaulding, J., on bee's tongue, 113.
 Sphenophorus, 915.
 Sphinx larva, an aquatic, 131.
 Spider, hymenopterous parasite in, 394.
 Spiders, poison apparatus of, 236.
 tube-constructing, 396.
 Spirostrephon copei, 231.
 Sponge, boring, 909.
 Sponges, budding in, 808.
 fresh-water, 935.
 infusorian nature of, 465.
 Squid, 366.
 development of, 553.
 Starch grains, growth of, 556.
 Starling, red-winged, 394.
 Stearns, R. E. C., Mya arenaria in San Francisco bay, 362.
 Stegocephali in Saxony, 1022.
 Stereorhachis, 588.
 Stomatoda of Tridacnata and corn, 761.
 Stone age in Egypt, 483.
 drilling, aboriginal, 536.
 Stone, G. H., apparent glacial deposits in valley drift, 251.
 Stones, inscribed, 581.
 Sturgeon, 744.
 Sturnella neglecta, 213.
 Succinea aurea, 391.
 campestris, 391.
 Swiss lakes, deep water fauna of, 235.
 Sycotypus canaliculatus, 321.
 Symphylla, 237, 699.
 Systæcus oreas, 439.
 Systæchus oreas, larva of, 143.
 Taconic system, 494.
 Tall in human embryo, 740.
 Tarantula pikei, 399.
 Tendrils, sensitiveness of, 939.
 Terns as flycatchers, 1005.
 Tessaria borealis, 986.
 Test objects, 506.
 Thalassoma moribii, 743.
 Thallophyta, 311, 473.
 Theology, comparative, 701.
 Thomas, C., MS. Troano, 625.
 Maya calendar, 767.
 Thrush, crissal, 217.
 curve-billed, 217.
 LeConte's 211.
 sickle-bill, Californian, 210.
 Thysanura, 701.
 Tiberias lake, deep dredgings in, 236.
 Tin, 253.
 Titmouse, least bush, 213.
 yellow-headed, 217.
 Todd, J. E., Asilus and Libellula, 1005.
 dimorphism in black mustard, 997.
 Terns as flycatchers, 1005.
 Tomocerus plumbeus, 232.
 Tortricidae, oviposition in, 63.
 Towhee, brown, 212.
 Tradescantia, stomata of, 761.
 Tree growth, curiosities of, 559.
 Treat, Mrs. Mary, the great-crested flycatcher, 601.
 Trelease, W., fertilization of Salvia splendens by birds, 265.
 fertilization of Calamintha nepeta, 11.
 Trenton gravels and early man, 333.
 Tribulus grandiflorus, 986.
 Trichina, 739.
 Trisodon quivirensis, 667.
 Triodites mus, 439.
 Troano MS., 625.
 Troglodytes gorilla, 448.
 niger, 448.
 Troupial, 216.
 Tucson, botanical notes from, 978.
 tortoises of, 1003.
 Turkey, 812.
 Turtles, 738.
 Twitchell, Ida, evaporation of water from leaves, 385.
 Uintatherium, 888.
 Ungulates, origin of the foot structure of, 269.
 Unio bollii, 390.
 Utah, iron ores of, 410.
 Vegetation, influence of severe winters on, 806.
 Velellida; nervous system in, 813.
 Vermont, archaeology of, 425.
 Vireo, belli, 216.
 gilvus, 216.
 Virginia creeper, 227.
 Vitrinella without eyes, 658.
 Vultures, claw of index digit of, 906.
 Warbler, yellow, 215.
 Ward, L. F., on incomplete adaptation as illustrated by the history of sex in plants, 89.
 Wax of Carnauba palm, 88.
 Webster, F. M., on habits of hairy woodpecker, 241.
 Web worm, 747.
 Weevil, water, of rice plant, 482.
 White, C. A., progress in invertebrate palæontology in the U. S. in 1880, 273.
 Wild boar, 956.
 goat, 947.
 hog, 958.
 horse, 957.
 sheep, 957.
 Winkle, edible, 321.
 Winslow, F., on breeding habits of oyster, 57.
 Wolfian body of salamander, 727.
 Woodchuck, 737.
 Woodpecker, hairy, 241.
 yellow-bellied, 738.
 Wren, creeper, 211.
 house, 318.
 Xylotrechus convergens, 151.
 Yellow fever fly, 150.
 Yellows of peach, 849, 961.
 Yellowstone park, glacial phenomena in, 203.
 Zoophyte trough, 73.
 Zum Indians, 886.
 Zygodenus paniculatus, poison of, 651.

